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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,451	01/02/2001	Joon-Hwan Kim	P 275722 P00H9024/US	7153
7590 12/01/2004 PILLSBURY WINTHROP LLP 1600 TYSONS BOULEVARD MCLEAN, VA 22102			EXAMINER SELBY, GEVELL V	
			ART UNIT 2615	PAPER NUMBER
DATE MAILED: 12/01/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/751,451	Applicant(s) KIM, JOON-HWAN	
	Examiner Gevell Selby	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/24/04 has been entered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. Acknowledgement is made of a claim for foreign priority under 35 U.S.C. 119(a)-(d) or (f).

Response to Arguments

3. Applicant's arguments filed 6/24/04 have been fully considered but they are not persuasive.

The applicant submits Ota does not disclose the limitation of a first counter for counting a number of first pixels each having a luminance value higher than a first predetermined level and second counter for counting a number of second pixels each having a luminance value lower than a second

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predetermined level as recited by claims 1, 5, 11, and the claims the depend from them. The Examiner respectfully disagrees.

Re claims 1-11) The Ota reference discloses a first counter (19b) for counting a number of first pixels each having a luminance value higher than a first predetermined level wherein the predetermined level is the minimum luminance value of the second region and a second counter (19a) for counting a number of second pixels each having a luminance value lower than a second predetermined level wherein the second predetermined level is the maximum luminance value for the first region. Therefore, the Ota reference does disclose the limitations of claims 1, 5, 11, and their dependent claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 2, 3, 4, and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ota, US 5,194,960.**

In regard to claim 1, Ota, US 5,194,960, discloses an auto exposing apparatus for an image sensor comprising:

first counting means (see figure 1, element 19b) receiving image data from an image sensor (see column 4, lines 23-24) for counting a

number of first pixels for an image frame, each of the first pixels having a luminance value associated therewith that is higher than a first predetermined level (see column 6, lines 25-30: The first predetermined level is the minimum luminance value of the second region);

second counting means (see figure 1, element 19a) receiving image data from the image sensor for counting a number of second pixels for an image frame,

each of the second pixels having a luminance value associated therewith that is lower than a second predetermined level (see column 6, lines 25-30: The second predetermined level is the maximum luminance value of the first region);

storing means (see figure 1, element 25) for storing an optimum exposure time for each luminance level;

and brightness analyzing means (see figure 1, element 20) for determining whether the image frame is to be controlled to be brighter or darker in response to the numbers of first and second pixels (see column 4, lines 50-55), and selecting the luminance level of the field output as an address of the storing means, wherein a exposure time corresponding to the address outputted from the brightness analyzing means is output to the image sensor to control the exposure time of the pixels (see column 15, lines 35-40: It is inherent that the CPU accesses the storing means by the corresponding address to acquire the data required).

In regard to claim 2, Ota, US 5,194,960, discloses an apparatus according to claim 1, wherein the brightness analyzing means includes:

a first level decision unit for deciding the brightness level of a bright screen in response to the number of first pixels (see figure 1, element 22 and column 4, lines 40-47);

a second level decision unit for deciding the darkness level of a dark screen in response to the number of the second pixels (see figure 1, element 22 and column 4, lines 40-47);

screen control determining means for determining whether the image frame is to be controlled to brighter or darker in response to the numbers of the first and second pixels and outputting a screen control determining signal indicative thereof (see column 12, lines 60 – 65);

and selecting means for selecting an address of the storing means in response to the screen control determining signal and an output of one of the level decision units.

It is inherent that the camera operating control means (see figure 1, element 22) has a selecting means to access the correct address in the ROM.

In regard to claim 3, Ota, US 5,194,960, discloses an apparatus according to claim 1 wherein the first and second predetermined levels are the same (see column 6, lines 25-30).

Each counter counts a different luminance region. The first counter counts pixels above a certain predetermined value and the second counter counts pixels below that same predetermined value.

In regard to claim 4, Ota, US 5,194,960, discloses an apparatus according to claim 1 wherein the first and second predetermined levels are different (see column 6, lines 25-30).

Each counter counts a different luminance region. The counter a counts pixels above a certain predetermined value and the counter c counts pixels below a different predetermined value.

In regard to claim 11, Ota, US 5,194,960, discloses a method for auto exposing apparatus an image sensor, comprising:

receiving image data from an image sensor (see column 3, lines 23-24);
counting a number of first pixels for an image frame, each of the first pixels having a luminance value associated therewith that is higher than a first predetermined level (see column 6, lines 25-30: The first predetermined level is the minimum luminance value of the second region);

counting a number of second pixels for an image frame, each of the second pixels having a luminance value associated therewith that is lower than a second predetermined level (see column 6, lines 25-30: The second predetermined level is the maximum luminance value of the first region);

storing an optimum exposure time for each luminance level (see figure 1, element 28);

analyzing whether the image frame is to be controlled to be brighter or darker in response to the numbers of first and second pixels, and selecting the optimum luminance level of the field (see column 4, lines 50-55);

and controlling exposure time based on the optimum luminance level (see column 12, lines 60 – 65).

In regard to claim 12, Ota, US 5,194,960, discloses an auto exposing apparatus for an image sensor comprising:

a first counter (see figure 1, element 19b) that receives image data from an image sensor (see column 4, lines 23-24) to counting a number of first pixels for an image frame, each of the first pixels having a luminance value associated therewith that is higher than a first predetermined level (see column 6, lines 25-30: The first predetermined level is the minimum luminance value of the second region);

a second counter (see figure 1, element 19a) that receives image data from the image sensor to count a number of second pixels for an image frame, each of the second pixels having a luminance value associated therewith that is lower than a second predetermined level (see column 6, lines 25-30: The second predetermined level is the maximum luminance value of the first region);

a storage (see figure 1, elements 25 and 26) that stores an optimum exposure time for each luminance level (see column 15, line 35 to column

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16, line 9: The RAM and ROM store the exposure control programs and exposure values); and

a brightness analyzer (see figure 1, element 20) that determines whether the image frame is to be controlled to be brighter or darker in response to the numbers of first and second pixels (see column 4, lines 50-55), and that selects the luminance level of the field output as an address of the storing means, wherein a exposure time corresponding to the address outputted from the brightness analyzer is output to the image sensor to control the exposure time of the pixels (see column 15, lines 35-40: It is inherent that the CPU accesses the storage by the corresponding address to retrieve the correct data required).

In regard to claim 13, Ota, US 5,194,960, discloses an apparatus according to claim 12 wherein the first and second predetermined levels are the same (see column 6, lines 25-30).

Each counter counts a different luminance region. The first counter counts pixels above a certain predetermined value and the second counter counts pixels below that same predetermined value.

In regard to claim 14, Ota, US 5,194,960, discloses an apparatus according to claim 12 wherein the first and second predetermined levels are different (see column 6, lines 25-30).

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Each counter counts a different luminance region. The counter a counts pixels above a certain predetermined value and the counter c counts pixels below a different predetermined value.

In regard to claim 15, Ota, US 5,194,960, discloses an apparatus according to claim 12, wherein the brightness analyzing means includes:

a first level decision unit for deciding the brightness level of a bright screen in response to the number of first pixels (see figure 1, element 22 and column 4, lines 40-47);

a second level decision unit for deciding the darkness level of a dark screen in response to the number of the second pixels (see figure 1, element 22 and column 4, lines 40-47);

screen control determining means for determining whether the image frame is to be controlled to brighter or darker in response to the numbers of the first and second pixels and outputting a screen control determining signal indicative thereof (see column 12, lines 60 – 65);

and selecting means for selecting an address of the storing means in response to the screen control determining signal and an output of one of the level decision units (It is inherent that the camera operating control means (see figure 1, element 22) has a selecting means to access the correct address in the ROM).

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In regard to claim 16, Ota, US 5,194,960, discloses an apparatus according to claim 12, wherein the look up table is a ROM (see figure 1, element 25).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action: -

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 5, 6, 7, 8, 9, 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota, US 5,194,960, in view of Roth et al., US 5,818,528.**

In regard to claim 5, Ota, US 5,194,960, discloses a an auto exposing apparatus for an image sensor comprising:

a first counter (see figure 1, element 19b) constructed and arranged to receive image data from an image sensor (see column4, lines 23-24) for counting a number of first pixels for an image frame, each of the first pixels having a luminance value associated therewith that is higher than a first predetermined level (see column 6, lines 25-30: The first predetermined level is the minimum luminance value of the second region);

a second counter (see figure 1, element 19a) constructed and arranged to receive image data from the image sensor (see column 4, lines 23-24) for counting a number of second pixels for an image frame, each of the second pixels having a

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luminance value associated therewith that is lower than a second predetermined level (see column 6, lines 25-30: The second predetermined level is the maximum luminance value of the first region);

and brightness analyzer (see figure 1, element 20) constructed and arranged to determine whether an imaged field is to be controlled to be brighter or darker in response to the numbers of first and second pixels (see column 4, lines 50-55), and selecting luminance level of the field output as an address of the storing means, wherein a exposure time corresponding to the address outputted from the brightness analyzing means is output to the image sensor to control the exposure time of the pixels (see column 15, lines 35-40: It is implied that the storing means is accessed by the corresponding address to the data required.)

Ota, US 5,194,960, lacks a look up table storing an optimum exposure time for each luminance level. Roth et. Al. discloses a look up table storing an optimum exposure time for each luminance level (see column 18, lines 55- 63). The lookup table uses the gain to access the predetermined setting for shutter speed (see column 18, lines 62-63). It would have been obvious to a person skilled in the arts at the time of invention to modify the storing means of Ota, US 5,194,960, in view of Roth et al., US 5,818,528, to have a lookup table as disclosed in order to obtain the predetermined exposure time.

In regard to claim 6, Ota, US 5,194,960, discloses an apparatus according to claim 5, wherein the brightness analyzer means includes:

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a first level decision unit for deciding the brightness level of a bright screen in response to the number of first pixels (see figure 1, element 22 and column 4, lines 40-47);

a second level decision unit for deciding the darkness level of a dark screen in response to the number of the second pixels (see figure 1, element 22 and column 4, lines 40-47);

a screen control determiner constructed and arranged to determine whether the image field is to be controlled to be brighter or darker in response to the numbers of the first and second pixels and outputting a screen control determining signal indicative thereof (see column 12, lines 60 – 65);

and a selector constructed and arranged to select an address of the look up table in response to the screen control determining signal and an output of one of the level decision units (It is implied that the camera operating control means (see figure 1, element 22) has a selecting means to access the correct address in the look up table).

In regard to claim 7, Ota, US 5,194,960, in view of Roth et al., US 5,818,528, discloses an apparatus according to claim 5. Ota, US 5,194,960, discloses an apparatus wherein the first and second predetermined levels are the same (see column 6, lines 25-30).

Each counter counts a different luminance region. The first counter counts pixels above a certain predetermined value and the second counter counts pixels below that same predetermined value.

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In regard to claim 8, Ota, US 5,194,960, in view of Roth et al., US 5,818,528, discloses an apparatus according to claim 5. Ota, US 5,194,960, discloses an apparatus wherein the first and second predetermined levels are different (see column 6, lines 25-30).

Each counter counts a different luminance region. The counter a counts pixels above a certain predetermined value and the counter c counts pixels below a different predetermined value.

In regard to claim 9, Ota, US 5,194,960, in view of Roth et al., US 5,818,528, discloses an apparatus according to claim 5. Ota, US 5,194,960, discloses an apparatus wherein the look up table is a ROM (see figure 1, element 25).

In regard to claim 10, Ota, US 5,194,960, in view of Roth et al., US 5,818,528, discloses all the limitations of claim 5. Roth discloses wherein the lookup table is a PROM (see column 19, lines 14-16). It would have been obvious to a person skilled in the art at the time of invention to modify Ota, US 5,194,960, in view of Roth et al., US 5,818,528, to use a PROM for the lookup table so it can be stored on a FPGA (see column 19, lines 15-20).

In regard to claim 17, Ota, US 5,194,960, discloses all the limitations of claim 12. The Ota reference does not disclose the storage is a PROM. Roth discloses an apparatus wherein the storage is a PROM (see column 19, lines 14-16). It would have been obvious to a person skilled in the art at the time of

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invention to have been motivated to modify Ota, US 5,194,960, in view of Roth et al., US 5,818,528, to have a PROM for the storage in order to be able to reprogram the storage when necessary.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,690,424, discloses an exposure control apparatus with a first and second counting means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 703-305-8623. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gvs



TUAN HO
PRIMARY EXAMINER